```
=> file biosis; d que l5
FILE 'BIOSIS' ENTERED AT 16:53:27 ON 04 MAR 2002
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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 21 February 2002 (20020221/ED)


L1  (      6472)SEA FILE=BIOSIS ABB=ON  PRINT? OR INKJET? OR INK (W) JET? OR
                MICRODOT? OR MICRO (W) DOT?
L2  (    359320)SEA FILE=BIOSIS ABB=ON  ELECTROD? OR CIRCUIT? OR SENSOR? OR
                MICROELECTROD? OR MICRO (W) ELECTROD? OR MICROSENSOR? OR MICRO
                (W) SENSOR OR MICROCIRCUIT? OR MICRO (W) CIRCUIT?
L3  (      2165)SEA FILE=BIOSIS ABB=ON  THIN (2A) FILM?
L4  (         7)SEA FILE=BIOSIS ABB=ON  L1 AND L2 AND L3
L5             0 SEA FILE=BIOSIS ABB=ON  L4 NOT (SCREEN PRINT### OR MICROCONTACT
                 PRINT### OR PRINTED CIRCUIT BOARD# OR THICK FILM#)


=>
=> file jicst
FILE 'JICST-EPLUS' ENTERED AT 16:53:36 ON 04 MAR 2002
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FILE COVERS 1985 TO 25 FEB 2002 (20020225/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED
TERM (/CT) THESAURUS RELOAD.

=> d que l13; d que l20; d que l27; d que l33; d que l41
L6  (      1046)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  INK JET OR INKJET
L7  (     50848)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  ELECTRODE OR MICROELECTROD
                E OR MICRO ELECTRODE
L8  (     55998)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                MICRO SENSOR
L9  (    134782)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT
                OR MICRO CIRCUIT
L10 (     68020)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  THIN FILM
L11 (        94)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L6 AND (L7 OR L8 OR L9)
L12 (        54)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  GOLD (W) L10
L13           0 SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L11 AND L12


L14 (      1046)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  INK JET OR INKJET
L15 (     50848)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  ELECTRODE OR MICROELECTROD
                E OR MICRO ELECTRODE
L16 (     55998)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                MICRO SENSOR
L17 (    134782)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT
                OR MICRO CIRCUIT
L18 (        14)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  MICRODOT OR MICRO DOT
L19 (        94)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L14 AND (L15 OR L16 OR
                L17)
L20           0 SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L19 AND L18
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L21 (     50848)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  ELECTRODE OR MICROELECTROD
            E OR MICRO ELECTRODE
L22 (     55998)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
            MICRO SENSOR
L23 (    134782)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT
            OR MICRO CIRCUIT
L24 (        14)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  MICRODOT OR MICRO DOT
L25 (    225355)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L23)
L26 (         1)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L25 AND L24
L27           0 SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L26 NOT (PEN LESS
            PLOTTER)/TI


L28 (     50848)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  ELECTRODE OR MICROELECTROD
            E OR MICRO ELECTRODE
L29 (     55998)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
            MICRO SENSOR
L30 (    134782)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT
            OR MICRO CIRCUIT
L31 (         2)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  SILICONE (S) SURFACE (S)
            MODIFY?
L32 (    225355)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  (L28 OR L29 OR L30)
L33           0 SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L32 AND L31


L34 (      1046)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  INK JET OR INKJET
L35 (     50848)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  ELECTRODE OR MICROELECTROD
            E OR MICRO ELECTRODE
L36 (     55998)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
            MICRO SENSOR
L37 (    134782)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT
            OR MICRO CIRCUIT
L38 (     13340)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  THIOL
L39 (    225355)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  (L35 OR L36 OR L37)
L40 (       504)SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L39 AND L38
L41           0 SEA FILE=JICST-EPLUS ABB=ON  PLU=ON  L40 AND L34


=> s l13 or l20 or l27 or l33 or l41
L141          0 L13 OR L20 OR L27 OR L33 OR L41

=>
=> file caplus
FILE 'CAPLUS' ENTERED AT 16:53:50 ON 04 MAR 2002
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FILE COVERS 1907 - 4 Mar 2002 VOL 136 ISS 10
FILE LAST UPDATED: 3 Mar 2002 (20020303/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

```
=> d que L44; d que L47; d que L50; d que L54; d que L59
L42 (      3871) SEA FILE=CAPLUS ABB=ON  PLU=ON  ("INK-JET PRINTING"/CT OR
                 "PRINTING (L) INK-JET"/CT OR "PRINTING, NONIMPACT (L) INK-JET"/
                 CT OR "PRINTING, NONIMPACT (L) INK-JET, RECEPTORS"/CT)
L43 (      3879) SEA FILE=CAPLUS ABB=ON  PLU=ON  ("FILM ELECTRODES"/CT OR
                 "ELECTRODES (L) FILM"/CT OR "THIN-FILM ELECTRODES"/CT)
L44           0 SEA FILE=CAPLUS ABB=ON  PLU=ON  L42 AND L43


L45 (      3871) SEA FILE=CAPLUS ABB=ON  PLU=ON  ("INK-JET PRINTING"/CT OR
                 "PRINTING (L) INK-JET"/CT OR "PRINTING, NONIMPACT (L) INK-JET"/
                 CT OR "PRINTING, NONIMPACT (L) INK-JET, RECEPTORS"/CT)
L46 (      2766) SEA FILE=CAPLUS ABB=ON  PLU=ON  MICROELECTRODES+NT,OLD/CT
L47           1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L45 AND L46


L48 (      3871) SEA FILE=CAPLUS ABB=ON  PLU=ON  ("INK-JET PRINTING"/CT OR
                 "PRINTING (L) INK-JET"/CT OR "PRINTING, NONIMPACT (L) INK-JET"/
                 CT OR "PRINTING, NONIMPACT (L) INK-JET, RECEPTORS"/CT)
L49 (       712) SEA FILE=CAPLUS ABB=ON  PLU=ON  MICROSENSORS+NT,OLD/CT
L50           1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L48 AND L49


L51 (      3871) SEA FILE=CAPLUS ABB=ON  PLU=ON  ("INK-JET PRINTING"/CT OR
                 "PRINTING (L) INK-JET"/CT OR "PRINTING, NONIMPACT (L) INK-JET"/
                 CT OR "PRINTING, NONIMPACT (L) INK-JET, RECEPTORS"/CT)
L52 (    121416) SEA FILE=CAPLUS ABB=ON  PLU=ON  THIN (L) FILM/OBI
L53 (    829825) SEA FILE=CAPLUS ABB=ON  PLU=ON  ?ELECTROD? OR ?CIRCUIT? OR
                 ?SENSOR?
L54          11 SEA FILE=CAPLUS ABB=ON  PLU=ON  L51 AND L52(L) L53


L55 (      3871) SEA FILE=CAPLUS ABB=ON  PLU=ON  ("INK-JET PRINTING"/CT OR
                 "PRINTING (L) INK-JET"/CT OR "PRINTING, NONIMPACT (L) INK-JET"/
                 CT OR "PRINTING, NONIMPACT (L) INK-JET, RECEPTORS"/CT)
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L56 (    121416)SEA FILE=CAPLUS ABB=ON  PLU=ON  THIN (L) FILM/OBI
L57 (    829825)SEA FILE=CAPLUS ABB=ON  PLU=ON  ?ELECTROD? OR ?CIRCUIT? OR
                ?SENSOR?
L58 (        11)SEA FILE=CAPLUS ABB=ON  PLU=ON  L55 AND L56(L) L57
L59           1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L58 AND (MICRODOT OR MICRO DOT
                OR GOLD THIN FILM OR THIOL OR (SILICONE-BASED SURFACE MODIFYING
                 AGENT))


=> s l44 or l47 or l50 or l54 or l59
L142        11 L44 OR L47 OR L50 OR L54 OR L59

=>
=> file compendex
FILE 'COMPENDEX' ENTERED AT 16:54:13 ON 04 MAR 2002
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FILE LAST UPDATED: 25 FEB 2002      <20020225/UP>
FILE COVERS 1970 TO DATE.


=> d que L65; d que L74; d que L83; d que L92; d que L98; d que L104
L60 (      1093)SEA FILE=COMPENDEX ABB=ON  PLU=ON  INK JET OR INKJET
L61 (     89800)SEA FILE=COMPENDEX ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE
                OR MICRO ELECTRODE
L62 (    104842)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                MICRO SENSOR
L63 (    283991)SEA FILE=COMPENDEX ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L64 (         2)SEA FILE=COMPENDEX ABB=ON  PLU=ON  L60 AND L61 AND L62 AND L63

L65           1 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L64 NOT (INK DROP SENSOR)/TI



L66 (      1093)SEA FILE=COMPENDEX ABB=ON  PLU=ON  INK JET OR INKJET
L67 (     89800)SEA FILE=COMPENDEX ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE
                OR MICRO ELECTRODE
L68 (    104842)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                MICRO SENSOR
L69 (    283991)SEA FILE=COMPENDEX ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L70 (    104742)SEA FILE=COMPENDEX ABB=ON  PLU=ON  THIN FILM
L71 (    458042)SEA FILE=COMPENDEX ABB=ON  PLU=ON  (L67 OR L68 OR L69)
L72 (       129)SEA FILE=COMPENDEX ABB=ON  PLU=ON  L71 AND L66
L73 (         3)SEA FILE=COMPENDEX ABB=ON  PLU=ON  L72 AND L70
L74           1 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L73 NOT (HOLE INTERCONNECTIO
                NS OR CONDUCTIVE RESISTIVE TRACES)/TI



L75 (      1093)SEA FILE=COMPENDEX ABB=ON  PLU=ON  INK JET OR INKJET
L76 (     89800)SEA FILE=COMPENDEX ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE
                OR MICRO ELECTRODE
L77 (    104842)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                MICRO SENSOR
L78 (    283991)SEA FILE=COMPENDEX ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L79 (    104742)SEA FILE=COMPENDEX ABB=ON  PLU=ON  THIN FILM
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L80 (       159)SEA FILE=COMPENDEX ABB=ON  PLU=ON  GOLD (W) L79
L81 (    458042)SEA FILE=COMPENDEX ABB=ON  PLU=ON  (L76 OR L77 OR L78)
L82 (       129)SEA FILE=COMPENDEX ABB=ON  PLU=ON  L81 AND L75
L83           0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L82 AND L80


L84 (      1093)SEA FILE=COMPENDEX ABB=ON  PLU=ON  INK JET OR INKJET
L85 (     89800)SEA FILE=COMPENDEX ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE
                 OR MICRO ELECTRODE
L86 (    104842)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                 MICRO SENSOR
L87 (    283991)SEA FILE=COMPENDEX ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                 MICRO CIRCUIT
L88 (        44)SEA FILE=COMPENDEX ABB=ON  PLU=ON  MICRODOT OR MICRO DOT
L89 (    458042)SEA FILE=COMPENDEX ABB=ON  PLU=ON  (L85 OR L86 OR L87)
L90 (       129)SEA FILE=COMPENDEX ABB=ON  PLU=ON  L89 AND L84
L91 (         1)SEA FILE=COMPENDEX ABB=ON  PLU=ON  L90 AND L88
L92           0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L91 NOT (FULL COLOR
                 PRINTER)/TI


L93 (     89800)SEA FILE=COMPENDEX ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE
                 OR MICRO ELECTRODE
L94 (    104842)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                 MICRO SENSOR
L95 (    283991)SEA FILE=COMPENDEX ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                 MICRO CIRCUIT
L96 (        21)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SILICONE (S) SURFACE (S)
                 MODIFY?
L97 (    458042)SEA FILE=COMPENDEX ABB=ON  PLU=ON  (L93 OR L94 OR L95)
L98           0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L97 AND L96


L99 (     89800)SEA FILE=COMPENDEX ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE
                 OR MICRO ELECTRODE
L100(    104842)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR
                 MICRO SENSOR
L101(    283991)SEA FILE=COMPENDEX ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                 MICRO CIRCUIT
L102(        21)SEA FILE=COMPENDEX ABB=ON  PLU=ON  SILICONE (S) SURFACE (S)
                 MODIFY?
L103(    458042)SEA FILE=COMPENDEX ABB=ON  PLU=ON  (L99 OR L100 OR L101)
L104          0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L103 AND L102

=> s l65 or l74 or l83 or l92 or l98 or l104
L143          2 L65 OR L74 OR L83 OR L92 OR L98 OR L104

=>
=> file inspec
FILE 'INSPEC' ENTERED AT 16:55:10 ON 04 MAR 2002
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FILE LAST UPDATED: 25 FEB 2002      <20020225/UP>
FILE COVERS 1969 TO DATE.
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```
=> d que L110; d que L118; d que L126; d que L133; d que L140
L105(      1755)SEA FILE=INSPEC ABB=ON  PLU=ON  INK JET OR INKJET
L106(     91837)SEA FILE=INSPEC ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE OR
                MICRO ELECTRODE
L107(    132704)SEA FILE=INSPEC ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR MICRO
                SENSOR
L108(    476100)SEA FILE=INSPEC ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L109(       662)SEA FILE=INSPEC ABB=ON  PLU=ON  L106 AND L107 AND L108
L110          2 SEA FILE=INSPEC ABB=ON  PLU=ON  L109 AND L105


L111(      1755)SEA FILE=INSPEC ABB=ON  PLU=ON  INK JET OR INKJET
L112(     91837)SEA FILE=INSPEC ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE OR
                MICRO ELECTRODE
L113(    132704)SEA FILE=INSPEC ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR MICRO
                SENSOR
L114(    476100)SEA FILE=INSPEC ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L115(    205809)SEA FILE=INSPEC ABB=ON  PLU=ON  THIN FILM
L116(       230)SEA FILE=INSPEC ABB=ON  PLU=ON  GOLD (W) L115
L117(       238)SEA FILE=INSPEC ABB=ON  PLU=ON  L111 AND (L112 OR L113 OR
                L114)
L118          0 SEA FILE=INSPEC ABB=ON  PLU=ON  L117 AND L116


L119(      1755)SEA FILE=INSPEC ABB=ON  PLU=ON  INK JET OR INKJET
L120(     91837)SEA FILE=INSPEC ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE OR
                MICRO ELECTRODE
L121(    132704)SEA FILE=INSPEC ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR MICRO
                SENSOR
L122(    476100)SEA FILE=INSPEC ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L123(        76)SEA FILE=INSPEC ABB=ON  PLU=ON  MICRODOT OR MICRO DOT
L124(       238)SEA FILE=INSPEC ABB=ON  PLU=ON  L119 AND (L120 OR L121 OR
                L122)
L125(         1)SEA FILE=INSPEC ABB=ON  PLU=ON  L124 AND L123
L126          0 SEA FILE=INSPEC ABB=ON  PLU=ON  L125 NOT (PRINTED CIRCUITS)/TI


L127(      1755)SEA FILE=INSPEC ABB=ON  PLU=ON  INK JET OR INKJET
L128(     91837)SEA FILE=INSPEC ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE OR
                MICRO ELECTRODE
L129(    132704)SEA FILE=INSPEC ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR MICRO
                SENSOR
L130(    476100)SEA FILE=INSPEC ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L131(         3)SEA FILE=INSPEC ABB=ON  PLU=ON  SILICONE (S) SURFACE (S)
                MODIFY?
L132(       238)SEA FILE=INSPEC ABB=ON  PLU=ON  L127 AND (L128 OR L129 OR
                L130)
L133          0 SEA FILE=INSPEC ABB=ON  PLU=ON  L132 AND L131


L134(      1755)SEA FILE=INSPEC ABB=ON  PLU=ON  INK JET OR INKJET
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L135(     91837)SEA FILE=INSPEC ABB=ON  PLU=ON  ELECTRODE OR MICROELECTRODE OR
                MICRO ELECTRODE
L136(    132704)SEA FILE=INSPEC ABB=ON  PLU=ON  SENSOR OR MICROSENSOR OR MICRO
                SENSOR
L137(    476100)SEA FILE=INSPEC ABB=ON  PLU=ON  CIRCUIT OR MICROCIRCUIT OR
                MICRO CIRCUIT
L138(       777)SEA FILE=INSPEC ABB=ON  PLU=ON  THIOL
L139(       238)SEA FILE=INSPEC ABB=ON  PLU=ON  L134 AND (L135 OR L136 OR
                L137)
L140          0 SEA FILE=INSPEC ABB=ON  PLU=ON  L139 AND L138


=> s l110 or l118 or l126 or l133 or l140
L144          2 L110 OR L118 OR L126 OR L133 OR L140

=>
=> dup rem l5 l141 l142 l143 l144
L5 HAS NO ANSWERS
L141 HAS NO ANSWERS
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PROCESSING COMPLETED FOR L5
PROCESSING COMPLETED FOR L141
PROCESSING COMPLETED FOR L142
PROCESSING COMPLETED FOR L143
PROCESSING COMPLETED FOR L144
L145         15 DUP REM L5 L141 L142 L143 L144 (0 DUPLICATES REMOVED)

=>
=> d ibib ab hit 1-15

L145 ANSWER 1 OF 15  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2002:103543  CAPLUS
DOCUMENT NUMBER:          136:143798
TITLE:                    Thin-film field-effect transistor with
                          organic-inorganic hybrid semiconductor requiring low
                          operating voltages
INVENTOR(S):              Dimitrakopoulos, Christos Dimitrios; Kagan, Cherie
                          Renee; Mitzi, David Brian
PATENT ASSIGNEE(S):       International Business Machines Corporation, USA
SOURCE:                   U.S., 17 pp., Cont.-in-part of U.S. Ser. No. 323,804.
                          CODEN: USXXAM
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   3
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     US 6344662         B1   20020205       US 2000-703964   20001101
     US 5981970         A    19991109       US 1997-827018   19970325
```

US 6210479	B1	20010403	US 1999-259128	19990226
US 6344660	B1	20020205	US 1999-323804	19990602

PRIORITY APPLN. INFO.: US 1997-827018 A1 19970325
US 1999-259128 A2 19990226
US 1999-323804 A2 19990602

AB A thin film transistor (TFT) device structure based on an org.-inorg. hybrid semiconductor material, that exhibits a high field effect mobility, high current modulation at lower operating voltages than the current state of the art org.-inorg. hybrid TFT devices. The structure comprises a suitable substrate disposed with the following sequence of features: a set of conducting gate electrodes covered with a high dielec. const. insulator, a layer of the org.-inorg. hybrid semiconductor, sets of elec. conducting source and drain electrodes corresponding to each of the gate lines, and an optional passivation layer that can overcoat and protect the device structure. Use of high dielec. const. gate insulators exploits the gate voltage dependence of the org.-inorg. hybrid semiconductor to achieve high field effect mobility levels at very low operating voltages. Judicious combinations of the choice of this high dielec. const. gate insulator material and the means to integrate it into the org.-inorg. hybrid based TFT structure are taught that would enable easy fabrication on glass or plastic substrates and the use of such devices in flat panel display applications.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Conducting polymers
Dielectric films
Electric contacts
Electrodeposition
Evaporation
Gate contacts
Glass substrates
Ink-jet printing
Lithography
Molecules
Passivation
Printing (impact)
Screen printing
Self-assembly
Shadow masks
Spraying
Sputtering
Thin film transistors
(**thin-film** field-effect transistor with org.-inorg. hybrid semiconductor requiring low operating voltages)

L145 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:78685 CAPLUS
DOCUMENT NUMBER: 134:139316
TITLE: Preferred methods for producing electrical circuit elements used to control an electronic display
INVENTOR(S): Duthaler, Gregg; Amundson, Karl; Drzaic, Paul; Kazlas, Peter; Wang, Jianna
PATENT ASSIGNEE(S): E Ink Corporation, USA
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001008242	A1	20010201	WO 2000-US40450	20000721

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-144952 P 19990721

AB Systems and methods for producing thin film transistor structures useful in controlling electronic displays. Thin film transistors are fabricated using all-additive methods including printing techniques, soft lithog. and material deposition methods. The thin film transistors can be deposited with the gate on the bottom or on the top of the structure. The deposition methods include the possibility of isolating nearly completely the transistor structure from the electronic display devices, so as to minimize or eliminate deleterious interactions there between.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Electric circuits
Gate contacts
Optical imaging devices
Semiconductor device fabrication
Thin film transistors
(fabrication of elec. **circuit** elements used to control electronic display)

IT Coating process
Colloids
Composites
Dielectric films
Dielectric liquids
Electrically conductive pastes
Ink-jet printing
Lithography
Photolithography
Printing (impact)
Printing (nonimpact)
Reactive sputtering
Screen printing
Sputtering
Vapor deposition process
(in fabrication of elec. circuit elements used to control electronic display)

L145 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:592212 CAPLUS
DOCUMENT NUMBER: 135:173668
TITLE: Material and method for printing high conductivity electrical conductors and other components on thin film transistor arrays
INVENTOR(S): Kydd, Paul H.; Wagner, Sigurd; Gleskova, Helena
PATENT ASSIGNEE(S): Parelec, Inc., USA
SOURCE: U.S., 24 pp., Cont.-in-part of U.S. Ser. No. 367,783. CODEN: USXXAM
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6274412	B1	20010814	US 1999-468649	19991221
US 6153348	A	20001128	US 1999-369571	19990806

PRIORITY APPLN. INFO.: US 1998-113047 P 19981221
US 1999-369571 A2 19990806
US 1999-367783 A2 19990820
US 1998-95782 P 19980807

AB A process sequence is disclosed for fabricating arrays of Thin Film Transistors by printing metallic conductors for the gate and data lines and possibly the In Sn Oxide Pixel electrode as well. The process eliminates conventional step-and-repeat photolithog. patterning, and provides high cond. metalization for large arrays. These arrays may be used in displays, detectors and scanners.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Electric contacts
Gravure printing
Ink-jet printing
Milling (size reduction)
Optical imaging devices
Optical scanners
Photolithography
Sensors
Thin film transistors
(material and method for printing high cond. elec. conductors and other components on **thin film** transistor arrays)

L145 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:760179 CAPLUS
DOCUMENT NUMBER: 135:325321
TITLE: Method for manufacture of patterned **thin film** such as metal wiring on **circuit** boards, color filters, black matrix according to ink-jet printing process and substrate therefor
INVENTOR(S): Fujimori, Natsuo; Ishida, Masaya
PATENT ASSIGNEE(S): Seiko Epson Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001288578	A2	20011019	JP 2000-99968	20000331

AB The title method includes the steps of: forming a pattern made of org. mols. on a substrate; and forming thin film pattern according to the org. mols. pattern using ink-jet printing method. The method provides the fine patter of the homogeneous film thickness.

TI Method for manufacture of patterned **thin film** such as metal wiring on **circuit** boards, color filters, black matrix according to ink-jet printing process and substrate therefor

IT **Ink-jet printing**
Optical filters

Printed **circuit** boards
(method for manuf. of patterned **thin film** such as metal wiring on **circuit** boards, color filters, black matrix according to ink-jet printing process and substrate therefor)

IT **Films**
(patterned; method for manuf. of patterned **thin film** such as metal wiring on **circuit** boards, color filters, black matrix according to ink-jet printing process and substrate therefor)

L145 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:22403 CAPLUS
DOCUMENT NUMBER: 136:77558
TITLE: Organic transistor fabricated by ink-jet printing
AUTHOR(S): Shimoda, Tatsuya; Kawase, Takeo
CORPORATE SOURCE: Technol. Platform Res. Cent., Seiko/Epson Corp., 281 Fujimi, Fujimi-machi, Suwa-gun, Nagano, 399-0293, Japan
SOURCE: Oyo Butsuri (2001), 70(12), 1452-1456
CODEN: OYBSA9; ISSN: 0369-8009
PUBLISHER: Oyo Butsuri Gakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. Org. devices and ultralow-energy process for fabricating thin-film elec. devices are the focus of much attention of researchers involved in thin-film device technol. We attempted to develop an org. transistor based on a novel process called "Micro-liq. process (.mu.-LP)". Ink-jet printing, one of the most powerful tools used in .mu.-LPs, provided us the org. TFT with a channel length as small as 5 .mu.m. Mobility and ON/OFF ratio of the developed TFT were 0.02 cm2/Vs and 105, resp. The copolymer of fluorene-bithiophene (F8T2) was used as a semiconducting layer. Inverter circuits, some of which have the vertical holes (Via-hole) by using ink-jet dissoln. process, were developed and their perfect operation was confirmed.

ST review microliq **thin film** transistor fabrication; fluorene biothiophene copolymer semiconductor TFT review; inverter **circuit** ink jet printed interconnection review

IT **Ink-jet printing**
Inverters
Thin film transistors
(manuf. of elec. interconnections in high-mobility org. TFT by ink-jet printing)

L145 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:588447 CAPLUS
DOCUMENT NUMBER: 135:296091
TITLE: High-resolution ink-jet printing of all-polymer transistor circuits
AUTHOR(S): Sirringhaus, H.; Kawase, T.; Friend, R. H.
CORPORATE SOURCE: USA
SOURCE: MRS Bull. (2001), 26(7), 539-543
CODEN: MRSBEA; ISSN: 0883-7694
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authiors have shown that soln. self-assembly and direct ink-jet printing techniques allow the controlled fabrication of high-mobility, short-channel (5 .mu.m) polymer transistors and complete transistor circuits, including via-hole interconnects. The device performance of printed polymer thin-film transistors with mobilities of up to 2 x 10-2 cm2/V-s and on-off current-switching ratios of 105 is believed to be

adequate for practical applications in active-matrix-display addressing or logic circuits in identification tags consisting of a few hundred transistors. Ink-jet printing has several advantageous attributes, some of which are particularly relevant if one envisions continuous, reel-to -reel manufg. of cheap integrated circuits on flexible substrates. Ink-jet printing provides accurate registration over large areas because the ink-jet head can be aligned locally with respect to a previously deposited pattern. Is local registration capability, which can be automated, is particularly important for flexible substrates that inevitably distort between subsequent patterning steps. Application-specific or even end-user-specific circuits can be defined by simple ink-jet printing of a network of interconnections and via holes on a prefabricated array of transistor gates. Compared with other liq.-phase patterning techniques, such as simple dip-coating of a substrate contg. a surface free-energy pattern, ink-jet printing allows precise local control of deposited droplet vol. and drying time to form patterns with arbitrary shapes and thicknesses.

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT **Ink-jet printing**
Liquid crystals, polymeric
Thin film transistors
(high-resoln. ink-jet printing of all-polymer transistor **circuits**)

L145 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:512014 CAPLUS
DOCUMENT NUMBER: 133:142679
TITLE: Thin-film transistor, liquid crystal display and their manufacture
INVENTOR(S): Kitawada, Kiyofumi
PATENT ASSIGNEE(S): Seiko Epson Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000208774	A2	20000728	JP 1999-9171	19990118

AB The invention relates to the thin-film transistor fabrication for the liq. crystal display, wherein a polysilazane-contg. coating soln. is sprayed onto sidewalls of gate electrodes by an ink-jet printing method.

ST **thin film** transistor liq crystal display manuf; ink jet coating gate **electrode** sidewall polysilazane

IT **Ink-jet printing**
Liquid crystal displays
Thin film transistors
(prepn. of gate **electrode** sidewall of **thin-film** transistor for liq. crystal display by ink-jet coating)

IT Silazanes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(prepn. of gate **electrode** sidewall of **thin-film** transistor for liq. crystal display by ink-jet coating)

L145 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:908113 CAPLUS

DOCUMENT NUMBER: 134:139795
TITLE: High-resolution ink-jet printing of all-polymer transistor circuits
AUTHOR(S): Sirringhaus, H.; Kawase, T.; Friend, R. H.; Shimoda, T.; Inbasekaran, M.; Wu, W.; Woo, E. P.
CORPORATE SOURCE: Cavendish Laboratory, University of Cambridge, Cambridge, CB3 OHE, UK
SOURCE: Science (Washington, D. C.) (2000), 290(5499), 2123-2126
CODEN: SCIEAS; ISSN: 0036-8075
PUBLISHER: American Association for the Advancement of Science
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Direct printing of functional electronic materials may provide a new route to low-cost fabrication of integrated circuits. However, to be useful it must allow continuous manufg. of all circuit components by successive soln. deposition and printing steps in the same environment. The authors demonstrate direct ink-jet printing of complete transistor circuits, including via-hole interconnections based on soln.-processed polymer conductors, insulators, and self-organizing semiconductors. The use of substrate surface energy patterning to direct the flow of H2O-based conducting polymer ink-jet droplets enables high-resoln. definition of practical channel lengths of 5 .mu.m. High mobilities of 0.02 cm2/V-s and on-off current switching ratios of 105 were achieved.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Conducting polymers
Ink-jet printing
Integrated circuits
Semiconductor device fabrication
Thin film transistors
(high-resoln. ink-jet printing of all-polymer transistor **circuits**)

L145 ANSWER 9 OF 15 COMPENDEX COPYRIGHT 2002 EI
ACCESSION NUMBER: 2001(27):252 COMPENDEX
TITLE: All-polymer **thin film** transistors fabricated by high-resolution **ink-jet** printing.
AUTHOR: Kawase, T. (Cavendish Laboratory University of Cambridge Epson Cambridge Laboratory, Cambridge, United Kingdom); Sirringhaus, H.; Friend, R.H.; Shimoda, T.
MEETING TITLE: 2000 IEEE International Electron Devices Meeting.
MEETING ORGANIZER: IEEE
MEETING LOCATION: San Francisco, CA, United States
SOURCE: Technical Digest - International Electron Devices Meeting 2000.p 623-626, (IEEE cat n 00CB37138)
CODEN: TDIMD5 ISSN: 0163-1918
PUBLICATION YEAR: 2000
MEETING NUMBER: 58091
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Theoretical
LANGUAGE: English
AB All-polymer **thin film** transistors (TFTs) are fabricated by **ink-jet** printing for the first time. Source/drain **electrodes** are printed using a conducting polymer (PEDOT) solution on substrates with patterned wetting-and-dewetting regions. A channel length down to 5 mum has been achieved without short-**circuits**. The TFTs show a high mobility of 0.02 cm2/V*s and on/off

ratio of more than 105 . These characteristics are equal or better than reference devices with gold **electrodes**. The fabrication of printed inverters is also demonstated, in which components such as gate **electrodes**, interconnections, via-holes or resistors, are patterned with the **ink-jet** technique. 19 Refs.

TI All-polymer **thin film** transistors fabricated by high-resolution **ink-jet** printing.

AB All-polymer **thin film** transistors (TFTs) are fabricated by **ink-jet** printing for the first time. Source/drain **electrodes** are printed using a conducting polymer (PEDOT) solution on substrates with patterned wetting-and-dewetting regions. A channel length down to 5 mum has been achieved without short-**circuits**. The TFTs show a high mobility of 0.02 cm2/V*s and on/off ratio of more than 105 . These characteristics are equal or better than reference devices with gold **electrodes**. The fabrication of printed inverters is also demonstated, in which components such as gate **electrodes**, interconnections, via-holes or resistors, are patterned with the **ink-jet** technique. 19 Refs.

CT ***Thin film** transistors; Semiconducting organic compounds; Semiconductor device manufacture; Carrier mobility; Gold; Ink

ST Gold **electrodes**

L145 ANSWER 10 OF 15 INSPEC COPYRIGHT 2002 IEE

ACCESSION NUMBER: 2000:6730124 INSPEC
DOCUMENT NUMBER: A2000-22-8780B-005; B2000-11-7230M-025
TITLE: Why CMOS-integrated transducers? A review.
AUTHOR: Witvrouw, A. (IMEC, Leuven, Belgium); Van Steenkiste, F.; Maes, D.; Haspeslagh, L.; Van Gerwen, P.; De Moor, P.; Sedky, S.; Van Hoof, C.; de Vries, A.C.; Verbist, A.; De Caussemaeker, A.; Parmentier, B.; Baert, K.
SOURCE: Microsystem Technologies (Aug. 2000) vol.6, no.5, p.192-9. 39 refs.
Published by: Springer-Verlag
CODEN: MCTCEF ISSN: 0946-7076
SICI: 0946-7076(200008)6:5L.192:CITR;1-H
DOCUMENT TYPE: Journal
TREATMENT CODE: Application; General Review; Practical
COUNTRY: Germany, Federal Republic of
LANGUAGE: English

AB In many applications up to millions of **sensors** or actuators have to be interconnected to each other and/or to the outside world, making the monolithic integration of circuitry mandatory. This monolithic integration is also pursued for mass-produced transducers because of economical reasons. CMOS-integrated transducers are thus found in imaging transducer arrays and mass-produced physical **sensors**. In addition, integrated biochemical **sensor** arrays can be CMOS-integrated. In this article first a general overview of the field is given and then selected work in the imaging and biochemical field is highlighted. Concerning imaging transducer arrays an overview is given of visible and IR imagers, displays and of **inkjet** printheads. Concerning the new field of biochemical **sensor** arrays, two examples are described: a blood-gas **sensor** and an array of interdigitated **electrodes**. Finally an overview of the possible technological approaches regarding integrated processing of transducers is presented.

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integrated biochemical **sensor** arrays can be CMOS-integrated. In this article first a general overview of the field is given and then selected work in the imaging and biochemical field is highlighted. Concerning imaging transducer arrays an overview is given of visible and IR imagers, displays and of **inkjet** printheads. Concerning the new field of biochemical **sensor** arrays, two examples are described: a blood-gas **sensor** and an array of interdigitated **electrodes**. Finally an overview of the possible technological approaches regarding integrated processing of transducers is presented.

CT ARRAYS; BIOMEDICAL **ELECTRODES**; BIOSENSORS; BLOOD; CMOS IMAGE **SENSORS**; CMOS INTEGRATED **CIRCUITS**; INFRARED IMAGING; **INK JET** PRINTERS; INTERDIGITAL TRANSDUCERS; **MICROSENSORS**; REVIEWS

ST CMOS-integrated transducers; review; **sensors**; actuators; monolithic integration; mass-produced transducers; imaging transducers arrays; **mass-produced physical sensors**; **integrated biochemical sensor arrays**; imaging transducer arrays; overview; visible imagers; IR imagers; displays; **inkjet print-heads**; **biochemical sensor arrays**; **blood-gas sensor**; **interdigitated electrodes**

L145 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:728303 CAPLUS
DOCUMENT NUMBER: 131:344321
TITLE: Manufacture of electron-emitting device, electron source, and display panel
INVENTOR(S): Kobayashi, Toyoko
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11317157	A2	19991116	JP 1998-121389	19980430

AB The device is manufd. by applying droplets of a soln. for forming thin film elec. conductor on a porous layer area, between a pair of electrodes facing each other, of a substrate so that the thin film elec. conductor is formed. The thin film with uniform thickness can be formed by the process. The electron source, involving an electron-emitting device and a means of applying elec. voltage on the device, is manufd. by a process involving the above method for formation of electron-emitting device. The display panel involving the electron source and an electroluminescent film is manufd. by a process involving the above process.

IT Electric conductors
Electron sources
Ink-jet printing
(formation of electron-emitting part on area between **electrode** on porous substrate by applying liq. droplet elec. conductor **thin film** precursor)

IT Silica gel, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(formation of electron-emitting part on area between **electrode** on porous substrate by applying liq. droplet elec. conductor **thin film** precursor)

IT 141-43-5D, Monoethanolamine, complex with palladium 7440-05-3D,

Palladium, complex with monoethanolamine
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(elec. conductor precursor; formation of electron-emitting part on area between **electrode** on porous substrate by applying liq. droplet elec. conductor **thin film** precursor)

IT 681-84-5DP, Tetramethoxysilane, reaction product with sucrose isopropylcarbmate
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(formation of electron-emitting part on area between **electrode** on porous substrate by applying liq. droplet elec. conductor **thin film** precursor)

IT 249739-19-3DP, reaction product with tetramethoxysilane
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(porous layer; formation of electron-emitting part on area between **electrode** on porous substrate by applying liq. droplet elec. conductor **thin film** precursor)

IT 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(porous; formation of electron-emitting part on area between **electrode** on porous substrate by applying liq. droplet elec. conductor **thin film** precursor)

IT 1314-08-5, Palladium oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**thin film**; formation of electron-emitting part on area between **electrode** on porous substrate by applying liq. droplet elec. conductor **thin film** precursor)

L145 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:249048 CAPLUS
DOCUMENT NUMBER: 130:264419
TITLE: Ink-jet printing in manufacture of microsensor devices
INVENTOR(S): Fukushima, Hitoshi; Shimoda, Tatsuya; Morgan, Hywel
PATENT ASSIGNEE(S): Seiko Epson Corporation, Japan; The University Court of the University of Glasgow
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 908725	A1	19990414	EP 1998-307968	19980930
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2248517	AA	19990330	CA 1998-2248517	19980930
US 2001044177	A1	20011122	US 2001-870588	20010601

PRIORITY APPLN. INFO.: JP 1997-266225 A 19970930
US 1998-163199 A3 19980930

AB An object of this invention is to provide a method of forming mol. recognizing films on sensor electrodes efficiently, within a short period of time, uniformly, and in a high quality state. Another object of this invention is to provide a method of accurately and efficiently introducing a vast no. of biol. samples for evaluation to the plural minute sensor electrode dots within a short period of time. In order to form org. thin

films on electrodes, a soln. of a material for the org. thin film is accurately printed via an ink-jet onto the surface of microelectrodes as required, thereby producing a high d. array of microelectrodes. Further, a soln. of a sample substance or a liq. substance to be sensed is ejected into air via an ink-jet nozzle to fall to the surface of org. thin membranes on the microelectrodes so that the sample is evaluated.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT **Thiols** (organic), uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(in prepn. of **electrodes** with **thin films** of gold; ink-jet printing in manuf. of **microsensor** devices)

IT Biochemical molecules
Ink-jet printing
Microelectrodes
Microsensors
(ink-jet printing in manuf. of microsensor devices)

IT **Films**
(org. **thin**; ink-jet printing in manuf. of **microsensor** devices)

IT Transistors
(polysilicone **thin film**; ink-jet printing in manuf. of **microsensor** devices)

IT 7440-57-5, Gold, uses
RL: DEV (Device component use); USES (Uses)
(**electrodes** with **thin films** of; ink-jet printing in manuf. of **microsensor** devices)

L145 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:435636 CAPLUS
DOCUMENT NUMBER: 127:73087
TITLE: Manufacture of electron emitting element for electron source, display panel and image forming apparatus
INVENTOR(S): Kobayashi, Tatsu
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09115433	A2	19970502	JP 1995-296017	19951020

AB Manuf. of the electron emitting element includes ink-jetting a soln. contg. a material for forming the nuclei of non-electrolytic deposition between electrodes on a substrate and then immersing the substrate into a soln. contg. the metal salt of the nuclei for forming the electron emitting region. Manuf. of the electron source, display panel and image forming app.

IT **Ink-jet printing**
(used in manuf. of electron emitting element, electron source, display panel and image forming app.)

IT 7772-99-8, Tin chloride, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ink-jetted between **electrode** for forming nuclei of elec. conductive **thin film** for manuf. of electron

emitting element, electron source, display panel and image forming app.)

L145 ANSWER 14 OF 15 COMPENDEX COPYRIGHT 2002 EI
ACCESSION NUMBER: 1996(23):1863 COMPENDEX
TITLE: Silicon-on-insulator integrated optical biosensors for environmental monitoring.
AUTHOR: Newman, Jeffrey D. (Cranfield Univ, Cranfield, UK); Turner, Anthony P.F; Rickman, Andrew G.; Harpin, Arnold P.R.; Shaw, Matthew P.; McKenzie, James S.
MEETING TITLE: IEE Colloquium on Optical Techniques for Environmental Monitoring.
MEETING LOCATION: London, UK
MEETING DATE: 15 Nov 1995
SOURCE: IEE Colloquium (Digest) n 182 1995.IEE, Stevenage, Engl.p 3/1-3/6
CODEN: DCILDN ISSN: 0963-3308
PUBLICATION YEAR: 1995
MEETING NUMBER: 44545
DOCUMENT TYPE: Conference Article
TREATMENT CODE: General Review
LANGUAGE: English
AB The integrated optical technologies employed for evanescent field optical chemical/biological **sensors** were defined by the requirement for low optical confinement waveguides.These waveguides provide the basis for selective evanescent sensing elements, but are incompatible with the practical demands of high accuracy integrated optical measurement **circuits**.A viable integrated optics **sensor** technology must combine both sensing optical waveguides and active waveguide **circuits**.Bookham Technology developed a manufacturing process known as Active Silicon Integrated Optical **Circuits** (ASOCTM) to meet these need.ASOCTM brings to chip manufacture a highly efficient production method and allows all key components to be integrated on a single chip.10 Refs.
AB The integrated optical technologies employed for evanescent field optical chemical/biological **sensors** were defined by the requirement for low optical confinement waveguides.These waveguides provide the basis for selective evanescent sensing elements, but are incompatible with the practical demands of high accuracy integrated optical measurement **circuits**.A viable integrated optics **sensor** technology must combine both sensing optical waveguides and active waveguide **circuits**.Bookham Technology developed a manufacturing process known as Active Silicon Integrated Optical **Circuits** (ASOCTM) to meet these need.ASOCTM brings to chip manufacture a highly efficient production method and allows all key components to be integrated on a single chip.10 Refs.
CT *Biosensors; Silicon on insulator technology; Environmental protection; Monitoring; Optical waveguides; Integrated optics; **Microelectrodes** ; Optical **sensors**
ST Environmental monitoring; **Ink jets**

L145 ANSWER 15 OF 15 INSPEC COPYRIGHT 2002 IEE
ACCESSION NUMBER: 1990:3567556 INSPEC
DOCUMENT NUMBER: B90018494; C90014032
TITLE: The ink drop **sensor**-a means of making **ink-jet** printers more reliable.
AUTHOR: Goepel, E. (Siemens AG, Munich, West Germany)
SOURCE: Proceedings. VLSI and Computer Peripherals. VLSI and Microelectronic Applications in Intelligent Peripherals and their Interconnection Networks (Cat.

No.89CH2704-5)
Washington, DC, USA: IEEE Comput. Soc. Press, 1989.
p.2/56-60 of xiv+791 pp. 3 refs.
Conference: Hamburg, West Germany, 8-12 May 1989
Sponsor(s): IEEE; Gesellschaft fur Inf.; Verband Deutscher Elektrotech
Price: CCCC CH2704-5/89/0000-2056$01.00
ISBN: 0-8186-1940-6
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Practical; Experimental
COUNTRY: United States
LANGUAGE: English

AB An ink-drop **sensor** has been developed for use in **ink-jet** printers so that the function of the multinozzle printhead can be checked before printing starts or cyclically during printing. If the **sensor** detects that one or more nozzles have failed, the printhead can be restored to correct operation in a service station. This process, which is completely automatic and requires no intervention on the part of the user, increases the reliability of the **ink-jet** printer. The **sensor** principle utilizes the electrical conductivity of the ink. When ink droplets from any nozzle in the printhead are ejected onto comblike **electrodes**, conductive links are established between the prongs of these **electrode** combs, and changes in resistance can be measured at the **sensor** terminals. These changes in resistance are then converted in a signal-conditioning **circuit** into digital voltage signals. The author also discusses modified versions of the **sensor** suitable for special applications such as measuring the flight time of ink droplets and determining print position errors.

TI The ink drop **sensor**-a means of making **ink-jet** printers more reliable.

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CT AUTOMATIC TESTING; ELECTRIC SENSING DEVICES; **INK JET** PRINTERS

ST **ink drop sensor**; **ink-jet printers**; multinozzle printhead; electrical conductivity; ink droplets; nozzle; **comblike electrodes**; conductive links; **electrode combs**; **signal-conditioning circuit**; digital voltage signals; flight time; print position errors